

REMARKS

Claim 1 has been amended to include subject matter recited in claim 5. Claims 18 and 19 have been added. Support for the new claims 18 and 19 is found on page 96, lines 15 to 17. Hence, no issues of new matters are presented. Claim 5 has been cancelled. Upon entry of this amendment, claims 1 - 4 and 6 - 19 will be pending in this application.

I. Response to Claim rejection Under 35USC§103(a)

A. Rejection of Claims 1, 4-16 under 35USC§103(a) as being unpatentable over the combination of Goto (Pub. No. US2002/0039707), Siga et al (US Patent No. 4,332,889) and Toya et al (US Patent No. 5,998,216)

Japanese Patent Application No. 2003-009372, on which the present application is based and the disclosure of which is incorporated in the present application by reference, describes in paragraph [0015] thereof that the photothermographic material of the present application, in which an image gradation obtained therefrom is designed to be 2 to 4, is particularly suitable for medical diagnosis.

Particularly in recent years, in photothermographic materials for mammography used in diagnosis of mastocarcinoma, the amount of silver in the coating has been increased to improve image quality of the photothermographic materials. However, increasing the amount of silver in the coating leads to an increase in production costs, and this is a significant demerit from an economic point of view. If a silver-saving agent is used as a counter measure, and the amount of silver in the coating can be reduced while maintaining good image quality, a large economic merit can be obtained. However, it

had been found first by the present inventor that use of a silver-saving agent deteriorates preservability of images (i.e., exacerbates the print-out problem). Through intensive study, the present inventor found that this problem can be solved by using a silver halide with a silver iodide content of 40-100 mole%. That is, when the silver halide with a silver iodide content of 40-100 mole% was used with a silver-saving agent in a photothermographic material, images with high density (high Dmax) were obtained and the print-out was suppressed at a low degree.

None of the cited references describes nor suggests this type of photothermographic material for medical diagnosis, containing a silver-saving agent and a silver halide with a high silver iodide content and being designed to have an image gradation of 2 to 4, and the effects obtained therefrom.

Given below are explanations with respect to the cited references.

Goto describes in paragraphs [0007]-[0008] that the object is to provide a photothermographic material that exhibits high contrast, and uses hydrazine compounds, olefin compounds or onium compounds as contrast-increasing agents. Specifically, the gradation of the photothermographic material of Goto obtained in Example 1 was 14.6-15.6 and that obtained in Example 2 was 15.1-15.9. These values are far different from the gradation of 2 to 4 obtained by the photothermographic material of the present application. The silver halide used in these Examples were silver iodobromochloride with a silver iodide content of 2 mole%, and is far different from the silver halide with a silver iodide content of 40-100 mole% used in the present application. Although silver iodobromide and silver iodide are listed as examples of the composition of silver halide in paragraph [0054], there is neither a description nor a suggestion that the above-

described problem in the present application can be solved by using the silver halide with a silver iodide content of 40-100 mole%.

Toya et al's object is to provide a photothermographic material that produces images with minimized interference fringes through exposure to laser light having a wavelength of less than 700 nm. Although silver iodobromide, silver iodochlorobromide and silver iodide are listed in column 16 as examples of usable silver halides, Toya et al describes that the most preferred is silver iodobromide having a silver iodide content of 0.1 to 40 mol %", and therefore, "teaches away" from the range of the silver iodide content of the present application.

Siga et al describes in column 6 that the preferable amount of silver iodide in the silver halide to be used is at least 50 mole %. However, Siga et al's image forming material is of a post-activation type, and as described in column 1, it is nonphotosensitive under normal lighting conditions but is rendered photosensitive by preliminary heating (heat activation). Such function is provided by the components (d) (an oxidizing agent for free silver) and (e) (a photoreactive halogeno oxidizing agent) described in claim 1 of Siga et al. In contrast, the photothermographic material of the present application is a usual-type photothermographic material that is photosensitive under normal lighting conditions, and does not require preliminary heating nor an oxidizing agent for free silver as features of the invention. Accordingly, Siga et al suggests nothing about the photothermographic material of the present application.

Further, in view of the deficiencies in each of Siga, Toya, and Goto, no combination of these references teaches or suggests the present invention.

In order to show the above-mentioned effect of the present invention, the applicant conducted a comparative study by using various photothermographic materials different in silver saving agents and in the content of silver iodide as shown in attached Declaration under 37 C.F.R. §1.132. It was found that the photothermographic material of the invention was excellent in unprocessed stock storability and image storability, which did not deteriorate even though the silver saving agent was used, and exhibited preferable tone and film physical property.

Therefore, one of ordinary skill in the art cannot obtain the invention in amended claims 1, 4, 6 - 16 based on the combination in disclosures of Goto, Toya et al and Siga. Claim 5 has been cancelled. Accordingly, applicant respectfully requests withdrawal of this rejection.

B. Rejection of Claims 1 - 15 under 35 U.S.C. §103(a) as being unpatentable over the combination of Katoh (Pub. No. 2001/0038977), Siga et al (US Patent No. 4,332,889) and Toya et al (US Patent No. 5,998,126)

Similar to the rejection of claims over the combination of Goto, Siga et al and Toya et al, none of the cited references describes nor suggests a photothermographic material for medical diagnosis, containing a silver-saving agent and a silver halide with a high silver iodide content and being designed to have an image gradation of 2 to 4, and the effects obtained therefrom.

Katoh describes use of a hydrazine compound or an olefin compound as an electron-transfer agent. Specifically, as can be seen from the Examples, the gradation obtained by the heat-developable image-recording material of Katoh (12.8-17.2 in

Examples 1 to 3, and 13.8 in Example 4) is far different from the gradation of 2 to 4 obtained by the photothermographic material of the present application. The silver halide used in Examples 1 to 3 was pure silver bromide, and that in Example 4 was silver iodobromide with a silver iodide content of 6 mole%, and these silver halides are far different from the silver halide with a silver iodide content of 40-100 mole% used in the photothermographic material of the present application. Although silver iodobromide and silver iodochlorobromide are listed as examples of the composition of silver halide in paragraph [0086], there is neither description nor suggestion that the above-described problem in the present application can be solved by using the silver halide with a silver iodide content of 40-100 mole%.

With respect to Siga et al and Toya et al, please see above.

Therefore, one of ordinary skill in the art cannot obtain the invention in amended claims 1 - 4, 6 - 15 based on the combination in disclosures of Katoh, Toya et al and Siga et al. Claim 5 has been cancelled. Accordingly, applicant respectfully requests withdrawal of this rejection.

II. Conclusion

In view of the above remarks, all the claims pending in the application are believed to be allowable. Early and favorable action is respectfully requested.

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